

**Before the  
Federal Communications Commission  
Washington, D.C. 20554**

In the Matter of	)	
	)	
Petition for Rulemaking: Amendment of	)	CG RM-11844
Rules Governing Ultra-Wideband Devices	)	
and Systems	)	

To: The Chief  
Office of Engineering and Technology  
Via: ECFS

**COMMENTS OF ZIGPOS GmbH**

1.     Introduction

On July 18, 2019 the Federal Communications Commission (FCC) in its Public Notice Report No. 3130 published the filing of the Petition for Rulemakings RM 11844, submitted by the petitioner Robert Bosch LLC (Bosch), in which Bosch requests that the FCC initiates a comprehensive review of the Part 15, Subpart F regulations governing Ultra-Wideband (UWB) devices and systems.

ZIGPOS GmbH (ZIGPOS), a global company serving customers worldwide (including the U.S.) providing energy efficient real time locating systems (eeRTLS) based on UWB radio, by counsel and pursuant to Section 1.405 of the Commission's Rules (47 C.F.R. § 1.405), would like to express support for such a review and revision of the UWB rules.

ZIGPOS hereby respectfully submits comments and its statement of strong support for the above-captioned Petition CG RM-11844.

ZIGPOS would like to underline the importance for such a review, revision and enhancement of the so far still very conservative UWB rules in the U.S. in order to allow for further growth and increased competitiveness of automated production systems and advanced manufacturing sites by introduction of innovative precise eeRTLS uniquely enabled by UWB radio.

## 2. Initial ultra-conservative UWB rule making

The restrictions of part 15, subpart F are characterized being “ultra-conservative” by the FCC in its initial Report and Order establishing the UWB rules, issued in 2002. FCC stated therein its planning to reconsider the restrictions and conditions at a later date, based upon experience gained then.

UWB application has proven for a long time now after more than 17 years of positive user experience that it is causing no harmful interference to any authorized radio service. Several waivers have been issued enabling innovative applications case-by-case in the meantime by FCC to lower subpart F restrictions considering the extremely low interference potential of UWB radio.

The UWB outdoor application restrictions and the extreme low maximum permitted transmit power levels for UWB radio in general are ultra-conservative and should be relaxed in an updated rule making.

## 3. Harmonized certification procedures

FCC has issued numerous waivers to allow operation of UWB radio devices enabling innovative applications since the release of the first Report and Order as an alternative way to updating the initial conservative rules and definitions governing the UWB operation. Such procedure requires significant additional efforts from governmental services as well as from industrial businesses in addition to the significant increase of time to market for highly innovative products.

Certification procedures for embedded UWB devices, in which additional electronic circuitry such as displays or sensors are combined with an UWB radio into

a device are suffering from current UWB rules. Reason is the fact that the allowed emissions from such additional circuitry can be significant higher than then the ridiculously low permitted UWB transmission levels and both can not be separated from each other.

Interference mitigation factors bearing the potential to enable co-existence with authorized radio services while at the same time enabling numerous innovative UWB applications with relaxed limitations on UWB technology application are not taken into account in the UWB rules. Therefore the flexibility offered by modern UWB systems to implement interference mitigation techniques such as e.g. listen-before-talk, trigger-before-transmit, networked operation, beam forming, duty cycle, relative movements, scenario shielding and detect-and-avoid are not taken into account.

#### 4. Proposals for change

ZIGPOS respectfully proposes, as requested in the petition to consider for an update of UWB rules an increase of the permitted maximum UWB transmit spectral power density by 10dB as well as a removal of the outdoor UWB application restrictions. Taking into account the interference mitigation factors can ensure the continuation of the so far proven extreme low probability of harmful interference from UWB systems to authorized radio services.

Further ZIGPOS respectfully requests effort to be made during an updated UWB rule making to ensure a higher degree of technology neutral access to the spectrum. Measurement procedures and definitions for UWB certification should be aligned therefore to existing international rules and procedures, such as e.g. defined by the European Telecommunications Standardization Institute (ETSI), allowing more flexibility in technology realization and thus higher innovation in applications.

It is respectfully proposed by ZIGPOS, based on a fair spectrum access paradigm, that no other unlicensed wideband radio system may be allowed to operate with different power spectral limitations within the frequency bands permitted for UWB operation unless proven co-existence technology has been implemented in such other

unlicensed wideband radio system ensuring fair spectrum access and enabling co-existing operation of such systems and UWB systems.



## 5. Conclusion

ZIGPOS GmbH supports the petition mentioned above and respectfully requests the FCC to start process of rulemaking to revise and update the rules governing UWB operation.

Respectfully submitted,

ZIGPOS GmbH

By: \_\_\_\_\_

  **ZIGPOS**

Erik Mademann, CEO